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INVENTION: INTERNET DOWNLOADED PROGRAMMABLE RECORDING DEVICE

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CERTIFIED TRANSLATION

Sir:

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2nd floor, Metrocity Minami Ikebukuro, 29-12, Minami Ikebukuro  
2-chome, Toshima-ku, Tokyo, JAPAN, declares:

- (1) that she knows well both the Japanese and English languages;
- (2) that she translated Japanese Application No. H08-132717 from Japanese to English;
- (3) that the attached English translation is a true and correct translation of the above-identified Japanese Application to the best of her knowledge and belief; and
- (4) that all statements made of her own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under 18 USC 1001, and that such false statements may jeopardize the validity of the application or any patent issuing thereon.

February 4, 2009

Date

Yuka Nakamura

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[Title of Document] Specification

[Title of the Invention] Remote control device

[Scope of Claims for a Patent]

[Claim 1]

5 A remote control device comprising:

communication means for receiving information  
containing commands sent through a transmission line for  
setting a device for operation modes;

10 display means for displaying representations based on  
the information containing the commands sent through the  
transmission line for setting the device for operation modes;

15 operation means for operating information for  
controlling the device contained in the information sent  
through the transmission line by pointing one of the  
representations on the display means; and

20 remote operation signal generator means for generating  
a remote operation signal for setting the device for an  
operation mode corresponding to one of commands for setting  
the device for the operation mode pointed by the operation  
means,

the device being set for the operation mode by the remote  
operation signal from the remote operation signal generator  
means.

[Claim 2]

The remote control device according to claim 1 wherein manufacturer identifying data and/or device identifying data are previously set for individual devices; and

when information for setting the device for an operation mode is entered, one of the remote operation signals determining behaviors based on the information for controlling devices, which is selected by one of the manufacturer identifying data and/or device identifying data for respective devices, is sent as a remote operation signal.

[Claim 3]

The remote control device according to claim 1 wherein, when information for setting the device for an operation mode is entered, remote control signals for setting different devices by different manufacturers for operation modes based on the information for setting devices for operation modes are transmitted sequentially.

[Claim 4]

The remote control device according to claim 1 wherein, when one of the manufacturer identifying data and/or device identifying data set for individual devices is designated through the transmission line, one of the remote operation signals set for the designated device by the designated manufacturer is received through the transmission line.

[Detailed Description of the Invention]

[0001]

[Technical Field to which the Invention belongs]

This invention relates to a remote controller suitable for use in operating VTR and other audio/visual devices and, in particular, to a remote controller suitable for use in a system for transmitting broadcast program schedule tables through a computer network.

[0002]

[Prior Art]

VTRs are equipped with program reservation function to automatically record a program of a selected channel when the preset time comes. A user can use the program reservation function very conveniently to record a desired program also during his absence. For program reservation in a conventional VTR, users had to personally enter the record start time, record end time and the channel of a desired program. It was a very complex and time-wasting job for users. To cope with the problem, a new system has been proposed, which enables program reservations only by entering a so-called Gemstar code (G code) assigned to an individual program. Users can conveniently use this system to easily set the start time, end time and channel of a desired program by simply entering a code shown on newspapers or magazines.

[0003]

[Problem to be solved by the Invention]

However, program reservation with conventional VTRs, either by individually entering the start time, end time, channel and other materials of the program or by simply entering a code, is based on a program schedule on newspapers, magazines or other publications, and cannot cope with any change in broadcast programs.

[0004]

In case of play-by-play broadcasting of baseball games, for example, the games often continue beyond scheduled sections of time, and subsequent programs are often deferred by several minutes to several hours. Conventionally, if the start time of a desired broadcast program is changed, users must reset program reservation after canceling the former reservation.

[0005]

Another situation to be considered is that channels have been increased remarkably along with recent development of CATV and satellite broadcasting. Newspapers and magazines cannot afford to print all programs of all channels. Some of CATV channels are local broadcast channels, and some are specialized channels for specific audience. Newspapers and magazines are not prepared for providing information. Satellite broadcasting often extends the service area beyond a single country. It is difficult for newspapers and

magazines to supply information on programs of such  
borderless satellite broadcasting to audience all over the  
service area.

[0006]

5           It is therefore an object of the invention to provide  
a remote control device easily operated for reservation,  
etc. of programs, and flexibly coping with changes in  
schedule of programs.

[0007]

10           Another object of the invention is to provide a remote  
control device facilitating reservation of programs  
regardless of an increase in broadcasting channels and an  
increase in service area.

[0008]

15           Another object of the invention is to provide a remote  
control device capable of jointly controlling audio visual  
systems and electronic device systems.

[0009]

20           According to the invention, there is provided to a  
remote control device comprising: communication means for  
receiving information containing commands sent through a  
transmission line for setting a device for operation modes;  
display means for displaying representations based on the  
commands sent through the transmission line for setting the  
25           device for operation modes; operation means for operating

information for controlling the device contained in the information sent through the transmission line by pointing one of the representations on the display means; and remote operation signal generator means for generating a remote operation signal for setting the device for an operation mode corresponding to one of commands for setting the device for the operation mode pointed by the operation means, the device being set for the operation mode by the remote operation signal from the remote operation signal generator means.

[0010]

Program information of TV broadcasting or radio broadcasting is provided by WWW services of an internet. Commands for determining behaviors of electronic devices are attached on the WWW hypertext. When a portion with a command is clicked, an infrared signal corresponding to the command is transmitted, and a target electronic device is set in a desired mode.

[0011]

[Embodiments of the Invention]

Explained below some embodiments of the invention with reference to the drawings. Fig. 1 shows a system to which the invention is applied. In Fig. 1, numeral 1 refers to a surface wave TV broadcasting station, 2 to a satellite TV broadcasting station, and 3 to an FM radio broadcasting

station.

[0012]

The surface wave TV station 1 broadcasts TV programs to the public, using VHF and/or UHF bands. The satellite TV station 2 broadcasts TV programs to the public, using a satellite 4. Since satellite TV broadcasting can cover a wider service area, its service area may be beyond a single country. Additionally, satellite broadcasting prepares many channels, and some provide broadcasting for limited audience. The FM radio station 3 broadcasts FM radio programs to the public. The FM radio station 3 may be a small-scaled local station that broadcasts local affairs with a low electric power. The system may also include a CATV TV station (not shown).

[0013]

Numerals 5 denotes an audio/visual system 5. In this example, the audio/visual system 5 each family owns includes VTR 11, FM tuner 12, MD player 13, TV receiver 14, audio amplifier 15, and speakers 16A, 16B. The VTR 11 having a satellite broadcasting tuner, FM tuner 12, MD player 13, TV receiver 14 and audio amplifier 15 have optical detectors 11A, 12A, 13A, 14A and 15A, respectively, to be remote-controlled by infrared signals.

[0014]

A TV signal transmitted from the surface TV station



1 is received at an antenna 17 of the audio/visual system  
5. Output of the antenna 17 is supplied to VTR 11 and TV  
receiver 14, and images based on the TV signal from the surface  
TV station 1 are displayed on the TV receiver 14. The TV  
5 signal from the surface TV station 1 can be recorded on a  
magnetic tape in VTR 11.

[0015]

A TV signal transmitted from the satellite TV station  
2 via the satellite 4 is caught by a parabola antenna 18  
10 of the audio/visual system 5. Output of the parabola antenna  
18 is frequency-converted into a satellite medium frequency  
by a converter (not shown), and supplied to VTR 11 and TV  
receiver 14. Images based on the TV signal from the satellite  
TV station 2 via the satellite 4 are displayed on the TV  
15 receiver 14. The TV signal can be recorded on a magnetic  
tape in VTR 11.

[0016]

A radio broadcast signal transmitted from the FM radio  
station 2 is received at the FM tuner 12. Output of the  
20 FM tuner 12 is supplied to the audio amplifier 15. Output  
of the audio amplifier 15 is output from the speakers 16A  
and 16B. The audio signal based on the broadcast signal  
from the FM radio station 2 can be recorded on a mini disc  
in the MD player 13.

[0017]

In the system to which the invention is applied, the surface TV station 1, satellite TV station 2 and FM radio station 3 also provide information on scheduled programs by WWW (World Wide Web) through the internet 6. Thus, the stations can introduce scheduled programs not only in characters but also in still or moving images with or without voices.

[0018]

In the system according to the invention, commands for selecting behaviors electronic devices can be provided on WWW pages. By making use of the commands on the WWW pages, a user or listener can easily reserve desired programs from program lists on WWW pages of individual stations.

[0019]

Each family prepares its personal computer 21 connectable to the internet 6. Connected to the personal computer 21 are a display 22, keyboard 23 and mouse 24. Further attached to the personal computer 21 is an interface box 25 through an interface such as RS232C or SCSI, for example.

[0020]

The interface box 25 generates an infrared signal in response to a command from the personal computer 22. The interface box 25 is disposed face to face with the VTR 11, FM tuner 12, MD player 13, TV receiver 14 and audio amplifier

15 so that the VTR 11, FM tuner 12, MD player 13, TV receiver  
14 and audio amplifier 15 are set in desired modes of operation  
by infrared signals from the interface box 25.

[0021]

5           An application called browser is installed in the  
personal computer 21 to see WWW pages connecting it to the  
internet 6 via a provider. When a viewer makes access to  
WWW sites managed by the stations 1, 2 and 3, using his personal  
computer 25 and the browser, and links his personal computer  
10 25 to the WWW pages of the stations 1, 2 and 3, he can get  
information on broadcast programs of the stations 1, 2 and  
3. The information is transmitted in form of hypertexts,  
and may include not only characters but also still or moving  
images, and voices as well.

15           [0022]

In the system according to the invention, commands for  
selecting operation modes of electronic devices are provided  
on WWW pages. Users can use these commands to easily reserve  
desired programs by confirming schedules of programs on WWW  
20 pages.

[0023]

For example, when a user makes access to the WWW site  
of the surface wave station 1 by using his personal computer  
21 and browser, the WWW page indicating the schedule of  
25 programs of the channel as shown in Fig. 2 is shown on the

display of the personal computer 21. As shown in Fig. 2,  
the WWW page provides indication of time schedules 31A, 31B  
and 31C, and indication of contents 32A, 32B and 32C of the  
programs. Additionally, commands for recording the  
5 programs are attached to the titles of the programs 32A,  
32B and 32C.

[0024]

A viewer can confirm the schedule of programs of the  
day, looking at the WWW page on his personal computer 21,  
10 and may click the mouse 24 at the title of a desired program  
32A, 32B or 32C. Responsively, an infrared signal  
instructing the VTR 11 to record the program at the indicated  
time is output from the interface box 25 in Fig. 1. Thus,  
the VTR 11 is set in the reserved mode for recording the  
15 program at the reserved time by the infrared signal.

[0025]

This is explained below in greater detail. In the  
system according to the invention, WWW pages contain commands  
for determining behaviors of electronic devices. For  
20 example, the WWW page shown in Fig. 2 contains a description  
in form of a hypertext as shown in Fig. 3. Characters in  
parenthesis, 33A, 33B and 33C in Fig. 3 are commands for  
determining behaviors of electronic device. Script  
languages may be made by using these commands.

[0026]

Fig. 4 shows an example of such commands and their operations. As shown in Fig. 4, these commands define behaviors of VTR, TV receiver, MDplayer and other electronic devices. For example, a hexadecimal command [00H] makes VTR stop its operation, and another hexadecimal command [01H] sets VTR for operation. These commands can control behaviors not only of audio/visual devices such as VTR and TV receiver but also of other various kinds of electronic devices such as air conditioner and illuminators.

[0027]

As shown in Fig. 5 in a functional block diagram of the personal computer 21, when the personal computer 21 is connected to WWW sites of the stations 1, 2 and 3, it receives, through the interface 40, hypertexts containing commands for determining behaviors of electronic devices. Then, the browser application 41 installed in the personal computer 21 deals with the hypertexts to link text data, still or moving image data, audio data, and so forth, and to form a multimedia picture. The multimedia picture is shown on the display 22 by a display controller 42.

[0028]

When commands for determining behaviors of electronic devices are contained in the hypertext, the browser application 41 arranges these commands in the picture.

[0029]

For example, when the hypertext as shown in Fig., 3 is received, representation as shown in Fig. 2 appears on the display 22 under the control by the browser application 41. Commands 33A, 33B and 33C for determining behaviors of electronic devices are attached to the titles 32A, 32B, 32C of programs. Titles of programs attached with commands may be underlined so that viewers or listeners can identify the existence of these commands.

[0030]

Alternatively, portions containing commands may be shown in a color different from the other portions or in a different kind or different size of font to distinguish from others. It is also possible to show icons 35 indicating commands for determining behaviors of electronic devices as shown in Fig. 6.

[0031]

In Fig. 5, when one of titles 32A, 32B, 32C containing commands is clicked by an input means 43 of a mouse or a keyboard, the command 33A, 33B or 33C attached to the title 32A, 32B or 32C is transmitted from a command transmitter 44 to the interface box 25.

[0032]

Assume here that the title 32A in Fig. 2 is clicked. As shown in Fig. 3, the command 33A describing [07H, OAH, 08H] is attached to the title 32A. Therefore, when the title

32A is clicked, the attached command [07H, 0AH, 08H] is transmitted to the interface box 25.

[0033]

As shown in Fig. 4, the command [07H, 0AH, 08H] is equivalent to a G code "142". Therefore, it results in transmitting the G code "142" to the interface box 25.

[0034]

Fig. 7 is a flowchart of a process of jobs in the personal computer 21. As shown in Fig. 7, in receipt of a hypertext containing commands for determining behaviors of electronic devices (step ST1), a multimedia picture with a text and still or moving images linked together is displayed under the control by the browser application 41 (step ST2). Next detected is whether any title portion with a command is clicked or not (step ST3). If any title portion is clicked, its command is transmitted to the interface box 25 (step ST4).

[0035]

The interface box 25 converts the received command into an infrared signal acceptable for the type of each electronic device, and transmits it to the VTR 11, FM tuner 12, MD player 13, TV receiver 14 and audio amplifier 15 of the audio/visual system 5. Thus, the respective devices are set in desired modes of operation.

[0036]

For example, when the title 32A in Fig. 2 is clicked, the command [07H, 0AH, 08H] attached to the title is received at the interface box 25. The interface box 25 converts the command into an infrared signal equivalent to the G code "142" for VTR 11, and transmits the infrared signal to VTR 11. As a result, VTR 11 is set for "142" or the G code system.

[0037]

Fig. 8 shows a construction of the interface box 25. As shown in Fig. 8, the interface box 25 has a code storage portion 52. As shown in Fig. 9, the code storage portion 52 stores code data (information on codes and carriers) of infrared signals for difference devices of different manufacturers. That is, codes and carriers used for controlling electronic devices with infrared signals are different among manufacturers. Even for devices from the same manufacturer, codes and carriers are often different among types of devices and those having different fabrication dates. The code storage portion 52 stores all code data of all devices of different manufacturers as shown in Fig. 9.

[0038]

In Fig. 8, a command prepared on a WWW page for setting electronic devices in desired modes of operation is sent from the personal computer 21 to the interface box 25. The command is applied to a controller 51 via an interface 53. The controller 51 interprets the command, and a corresponding



code data is read out from the code storage portion 52. Output from the code storage portion 52 is supplied to an infrared signal generator 54 which, in turn, generates an infrared signal of the code and carrier determined by the code data.

[0039]

As referred to above, codes and carriers for controlling electronic devices are different among different manufacturers and even among different devices from the same manufacturer depending on types and dates of fabrication. On the other hand, commands sent to the interface box 25 determine respective modes of operation of devices commonly to all devices regardless of manufacturers or types. Therefore, interpretation of commands and conversion of commands to codes and carriers acceptable for individual devices are required. Thus, the VTR 11, FM tuner 12, MD player 13, TV receiver 14 and audio amplifier 15 of the audio/visual system 5 must be registered.

[0040]

Registration of electronic devices may be done through the personal computer 21, for example. Registration may be made either upon installment of the audio/visual system or each time when a user sets his audio/visual devices in desired modes of operation, referring to on WWW pages. Also, the registration may be done on the part of the interface box 25.

[0041]

For registration of devices, a select-device menu is first displayed as shown in Fig. 10A. On the select-device menu, a user selects any device category among VTR, TV receiver, and others. Responsively, a select-maker menu listing different manufacturers appears on the screen as shown in Fig. 10B. After the user selects a manufacturer from the select-maker menu, a picture for entering a fabrication date appears as shown in Fig. 10C. When the user enters the fabrication date, maker information and information on the fabrication date on his device are introduced. Responsively, the introduced information is sent to and registered in the interface box 25.

[0042]

Fig. 11 is a flow chart of jobs in this process. As shown in Fig. 11, upon registration of devices, the select-device menu is first displayed (step ST11). On this menu, it is checked whether VTR, TV receiver, MD player/recorder, or any other device is selected or not (step ST12). If any device is selected, then the select-maker menu is displayed (step ST13). On the select-maker menu, it is checked whether any maker A, B or C is selected or not (step ST14). If any maker is selected, the fabrication date entry menu is displayed (step ST15). On the fabrication date entry menu, it is checked whether any fabrication date is entered or not (step ST16). If any date is entered, all

information given here on the maker and the fabrication date of the device is registered in the interface box 25 (step ST17).

[0043]

5 Assume here that the VTR 11 of the audio/visual system  
5 shown in Fig. 1 is a product fabricated by manufacturer  
A in a year from 1985 to 1990 and that the WWW page as shown  
in Fig. 2 is shown on the display 22 of the personal computer  
21 and the title 32A on the WWW page is clicked. In this  
10 case, a command equivalent to "142" of the G code system  
is sent from the personal computer 21 to the interface box  
25.

[0044]

15 In case of the VTR manufactured by manufacturer A  
between years 1985 and 1990, the code data equivalent to  
"142" of the G code system is those registered in addresses  
"A7, A10, A8". Therefore, code data stored at addresses  
"A7, A10, A8" among others stored in the code storage portion  
52 shown in Fig. 8 is read out.

20 [0045]

The code data is sent to the infrared signal generator  
54, and an infrared signal from the infrared signal generator  
54 is transmitted to VTR 11. As a result, G code "142" is  
set in VTR 11.

25 [0046]

Fig. 12 is a flow chart of responsive jobs in the interface box 25. As shown in Fig. 12, it is checked whether any command is sent from the personal computer 21 (step ST21). If any command is sent, then it is interpreted (step ST22),  
5 and data in record on manufacturers and fabrication dates of devices is retrieved (step ST23). Based on the information on makers and information on fabrication dates of devices, a particular code data corresponding to the mode of operation designated by the command is determined (step  
10 ST24), and then read out from the code storage portion 52 (step ST25). The data is transmitted in form of an infrared signal from the infrared signal generator 54 (step ST25).

[0047]

Although the above example has been explained as the  
15 job of converting commands for determining behaviors of electronics device into infrared signal codes being shared by the interface box 25, the conversion may be done on the part of the personal computer 21.

[0048]

20 In addition, although the above example has been explained as previously registering manufactures and fabrication dates of devices, if codes for individual demands on all devices are read out, prior registration of makers and fabrication dates of devices is not necessary.

25 [0049]

More specifically, as shown in Fig. 13, it is checked whether any command is sent from the personal computer 21 (step ST31). If a command is sent, it is interpreted (step ST32). After that, code data defining jobs indicated by codes corresponding to the command for all devices of all manufacturers are read out sequentially (step ST33), and they are transmitted in sequence as infrared signals from the infrared signal generator 54 (step ST34). Since the sequentially transmitted code data for the command must contain the data for the device of the audio/visual system 5, when a user reads out code data for a desired mode of operation for all devices of all manufacturers, he can set his device for a desired mode of operation.

[0050]

Since infrared signals have different code systems and carriers among different manufacturers, it seldom occurs that devices malfunction when codes for all devices of all manufacturers are read out sequentially.

[0051]

In the above example, the code storage portion 52 previously stores all code data of all devices of all manufacturers. In this case, however, codes amount to an enormous volume, and infrared signal codes may be changed.

[0052]

To cope this problem, the code storage portion may be

configured to do both reading and writing so as to introduce code data entered from the exterior as a leaning remote controller.

[0053]

5           Alternatively, code data may be transferred by WWW of the internet. For example, as shown in Fig. 14, indication 36 on manufactures and fabrication dates of VTRs is put on a WWW page for program guide. Attached to the indication 36 are commands for introducing code data for individual  
10           devices of individual manufacturers. If a VTR of a particular manufacturer having a particular fabrication date is selected from the indication 36, then a code data for the type of devices is down-loaded through the internet  
6.

15           [0054]

          Fig. 15 is a flow chart of behaviors taken responsively. As shown in Fig. 15, it is checked whether an indication for setting code data is clicked or not (step ST41). If an indication is clicked, a demand for the corresponding  
20           data is output through the internet 6 (step ST42). Then, it is checked whether the code data can be received or not (step 43), and if so, the code data is down-loaded (step ST44).

[0055]

25           In this case, each broadcasting station may prepare

its own server for supplying code data, or code data may be held in other servers, e.g. those of manufacturers of devices. If code data are held in a server of a manufacturer of the device, selection of VTR of fabricated by the manufacture on a date or in a period of time from the indication 36 is linked to an FTP (File Transfer Protocol) server of the manufacturer. Then, the code data for the electronic device of the manufacturer is down-loaded from the FTP server.

[0056]

Although the example of Fig. 1 has been explained as using infrared rays issued from the interface box 25 to remote-control VRT 11, FM tuner 12, MD player/recorder 13, TV receiver 14, audio amplifier 15, and so on, of the audio/visual system 5, a wired interface box 28 may be used for such remote control as shown in Fig. 16. In this case, the interface box 28 can be reciprocally, bidirectionally connected to the audio/visual system 5 including the personal computer 21, VTR 11, FM tuner 12, MD player/recorder, TV receiver 14, audio amplifier 15, and others.

[0057]

In this manner, the system according to the invention permits transmission of programs of broadcasting stations 1, 2 and 3 by using WWW services of the internet. The schedule of programs presented by WWW are renewed from time to time if any changes occur in the schedule due to, for example,

an extension of time of play-to-play broadcasting of a baseball game, so as to give viewers or listeners the latest information. Additionally, reservation of a program can be done by simply clicking to a corresponding indication of a WWW page as explained above.

[0058]

As mentioned before, channels have been increased remarkably along with remarkable development of satellite broadcasting and CATV. Under the circumstances, since the internet is an international computer network, by using the internet, it is possible to give viewers or listeners all information on all programs of all channels even when channels increase and service areas extend beyond countries.

[0059]

The use of the system is not limited to reservation of programs. Because commands for determining behaviors of electronic devices can be easily made by using hypertexts, this system can be widely used also for other purposes.

[0060]

Fig. 17 shows an example of the system used for a different purpose. In Fig. 17, numeral 101 denotes a TV receiver, 102 refers to an illuminator, and 103 to an air conditioner. The TV receiver 101, illuminator 102, and air conditioner 103 have optical detectors 101A, 102A and 103A, respectively. They are set in desired mode of operation



by infrared signal from an interface box 104 connected to a personal computer 105.

[0061]

Assume that a user desires to keep a constant cooling effect by the air conditioner and a constant brightness of the illuminator 102. In this case, an optimum value of the cooling effect by the air conditioner 103 and an optimum value of brightness by the illuminator 102 are described as commands in a hypertext, by using the personal computer 105.

[0062]

In this manner, commands in the hypertext is sent from the personal computer 105 to the interface box 104, and infrared signals responsive to the commands in the hypertext are output from the interface box 104. As a result, the illuminator 102 and the air conditioner 103 can be set for optimum modes of operation.

[0063]

When the personal computer 105 is connected to an external portable computer 107 through the internet 106, the TV receiver 101, illuminator 102, air conditioner 113, or any other electronic device can be controlled through the external portable computer 107.

[0064]

More specifically, a hypertext containing a command

for setting the TV receiver 101, illuminator 102, or air conditioner 103 in a desired mode of operation is made on the exterior personal computer 107. The hypertext is sent from the exterior portable computer 107 to the personal computer 105 through the internet 106. In receipt of the hypertext, the interface box 104 issues an infrared signal corresponding to the command in the hypertext, and the TV receiver 101, illuminator 102, or air conditioner 103 is set for the desired mode of operation.

[0065]

[Effects of the Invention]

According to the invention, information on broadcasting programs is supplied by WWW services of the internet. Since WWW can transfer information based on a hypertext through the network and can deal with information including not only text data but also image data and audio data, program guides by WWW can present programs not only in characters but also in still or moving images with or without voices. Since the internet is an international computer network system, it is available for all program guides from those of satellite broadcasting for wider service areas beyond countries to those of mini FM stations for very small service areas. Additionally, the use of WWW can present renewed latest program guides.

[0066]

Moreover, according to the invention, commands for determining behaviors of electronic devices are attached on WWW pages from broadcasting stations. When a portion with a command is clicked, an infrared signal corresponding to the command is transmitted, and a target electronic device is set in a desired mode. As a result, a user can readily attain reservation of a desired program, visually confirming necessary information on a WWW page, for example. Further, since commands for determining behaviors of electronic devices can be put in WWW pages, audio/visual systems or other electronic systems can be collectively controlled by using the commands.

#### [Brief Description of the Drawings]

##### [Fig. 1]

Schematic diagram using for explanation an example of an electronic system to which the present invention is applied.

##### [Fig. 2]

Schematic diagram using for explanation of display images in an example of an electronic system to which the present invention is applied.

##### [Fig. 3]

Schematic diagram using for explanation of a hypertext in an example of an electronic system to which the present invention is applied.

[Fig. 4]

Schematic diagram using for explanation of a command in an example of an electronic system to which the present invention is applied.

5 [Fig. 5]

Block diagram using for explanation of operation of a computer in an example of an electronic system to which the present invention is applied.

[Fig. 6]

10 Schematic diagram using for explanation of display images in an example of an electronic system to which the present invention is applied.

[Fig. 7]

15 Flow chart using for explanation of operation of a computer in an example of an electronic system to which the present invention is applied.

[Fig. 8]

20 Block diagram using for explanation of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 9]

Schematic diagram using for explanation of a code of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 10]

Block diagram using for explanation of an interface box in an example of an electronic system to which the present invention is applied.

5 [Fig. 11]

Flow chart using for explanation of operation of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 12]

10 Flow chart using for explanation of operation of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 13]

15 Flow chart using for explanation of operation of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 14]

20 Block diagram using for explanation of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 15]

Flow chart using for explanation of operation of an interface box in an example of an electronic system to which the present invention is applied.

[Fig. 16]

Schematic diagram using for explanation of another example of an electronic system to which the present invention is applied.

5 [Fig. 17]

Schematic diagram using for explanation of further another example of an electronic system to which the present invention is applied.

[Description of Reference Numerals]

10 1,2,3, broadcasting station 6 internet  
11,12,13,14,15 device 21 personal computer  
25 interface box

## Translation of Drawings

[Fig. 1]

6 INTERNET

5 [Fig. 2]

(1) PROGRAM GUIDE

32A NEWS

32B DRAMA

32C NEWS

10

[Fig. 3]

(1) NEWS

(2) DRAMA

(3) NEWS

15

[Fig. 4]

(1) COMMAND

(2) MODES

(3) VTR STOP

20 (4) VTR REPRODUCE

(5) VTR REWIND

(6) VTR FAST-FORWARD

	(7)	VTR RECORD
	(8)	VTR POWER
	(9)	G CODE 0
	(10)	G CODE 1
5	(11)	G CODE 2
	(12)	G CODE 3
	(13)	G CODE 4
	(14)	TV POWER
	(15)	MD STOP
10	(16)	MD REPRODUCE
	(17)	MD RECORD
	(18)	AIR CONDITIONER ON
	(19)	AIR CONDITIONER OFF
15		[Fig. 5]
	22	DISPLAY
	41	BROWSER
	42	DISPLAY CONTROLLER
	43	INPUT
20	44	COMMAND TRANSMITTER



[Fig. 7]

(1) START

ST1 RECEIVE HYPER TEXT

ST2 DISPLAY MULTIMEDIA SCREENS

5 ST3 COMMAND CLICKED?

ST4 SEND COMMAND

[Fig. 8]

52 CODE STORAGE

10 51 CONTROLLER

54 INFRARED SIGNAL GENERATOR

[Fig. 9]

(1) ADDRESS

15 (2) CODE DATA

(3) VTR STOP

(4) VTR REPRODUCE

(5) VTR REWIND

(6) VTR FAST-FORWARD

20 (7) VTR RECORD

(8) VTR POWER

(9) G CODE 0  
(10) G CODE 1  
(11) G CODE 2  
(12) G CODE 3  
5 (13) G CODE 4  
(14) VTR STOP  
(15) VTR REPRODUCE  
(16) VTR STOP  
(17) VTR REPRODUCE  
10 (18) TV POWER  
(19) MAKER A VTR  
(20) MAKER A VTR  
(21) MAKER B VTR  
(22) MAKER A TV

15

[Fig. 10]

(1) SELECT DEVICE  
1. VTR  
2. TV  
20 3. MD PLAYER  
4. AMPLIFIER

(2) SELECT MAKER

1. MAKER A

2. MAKER B

3. MAKER C

5 (3) DATE OF FABRICATION

[Fig. 11]

(1) REGISTER DEVICE

ST11 DISPLAY DEVICE SELECT MENU

10 ST12 SELECT DEVICE

ST13 DISPLAY MAKER SELECT MENU

ST14 SELECT MAKER

ST15 DISPLAY FABRICATION DATE ENTRY MENU

ST16 ENTER FABRICATION DATE

15 ST17 REGISTER INFORMATION

[Fig. 12]

(1) START

ST21 ENTER COMMAND

20 ST22 INTERPRET COMMAND

ST23 CALL OUT INFORMATION ON MAKER AND FABRICATION DATE

ST24 DETERMINE CODE DATA  
ST25 RETRIEVE CODE DATA  
ST26 ISSUE INFRARED SIGNAL

5 [Fig. 13]

(1) START

ST31 ENTER COMMAND

ST32 INTERPRET COMMAND

10 ST33 RETRIEVE CORRESPONDING CODE DATA FOR ALL MAKERS AND  
ALL DEVICE

ST34 SEND INFRARED SIGNAL

[Fig. 14]

(1) PROGRAM GUIDE

15 (2) NEWS

(3) DRAMA

(4) NEWS

(5) VTR CODE

1. MAKER A 85-90

20 2. MAKER A 90 OR MORE

3. MAKER B 85-90

4. MAKER B 90 OR MORE

[Fig. 15]

(1) START

ST41 CODE DATA INDICATOR CLICKED?

5 ST42 REQUEST INTAKE OFF CODE DATA

ST43 RECEIVE CODE DATA

ST44 DOWNLOAD CODE DATA

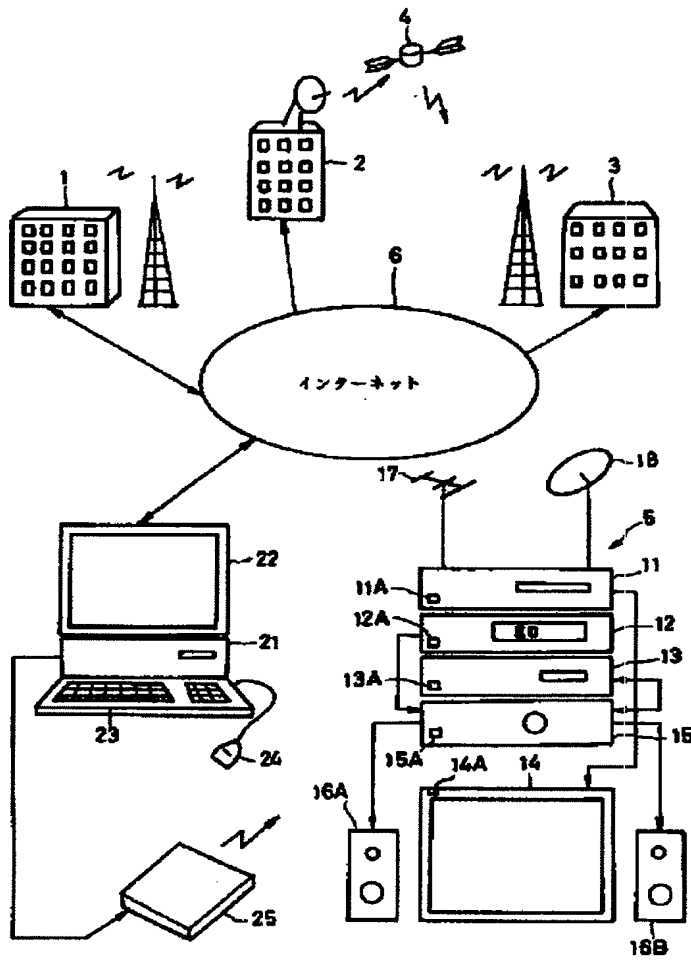
[Fig. 16]

10 6 INTERNET

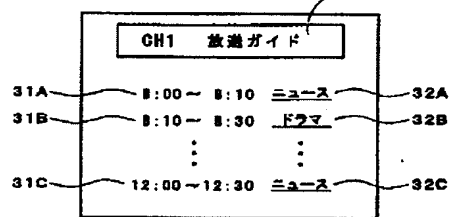
[Fig. 17]

106 INTERNET

【図1】



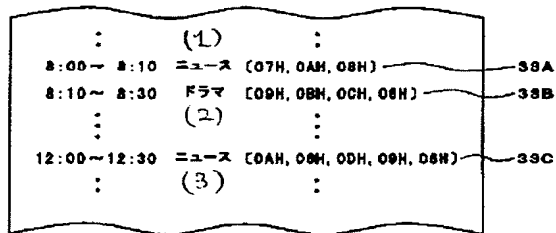
【図2】 (1)



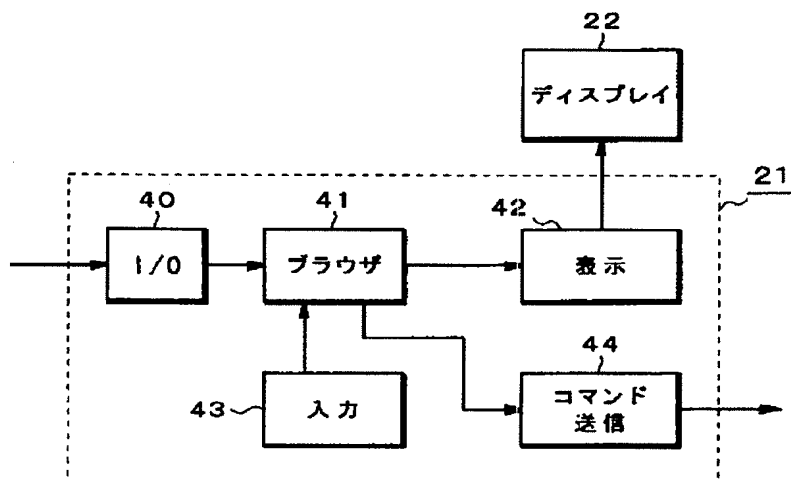
【図4】

(1)	(2)	
コマンド	動作	
00H	VTR ストップ	(3)
01H	VTR 再生	(4)
02H	VTR 巻戻し	(5)
03H	VTR 早送り	(6)
04H	VTR 録画	(7)
05H	VTR 電源	(8)
06H	Gコード 0	(9)
07H	Gコード 1	(10)
08H	Gコード 2	(11)
09H	Gコード 3	(12)
0AH	Gコード 4	(13)
⋮	⋮	
10H	TV 電源	(14)
11H	TV CH1	
12H	TV CH2	
13H	TV CH3	
14H	TV CH4	
⋮	⋮	
20H	MD ストップ	(15)
21H	MD 再生	(16)
22H	MD 記録	(17)
⋮	⋮	
50H	エアコン オン	(18)
51H	エアコン オフ	(19)

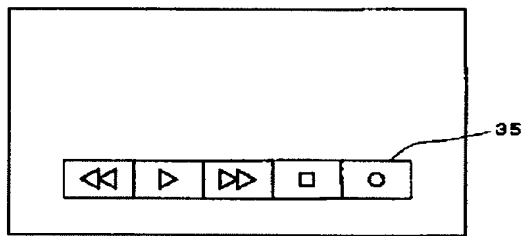
【図3】



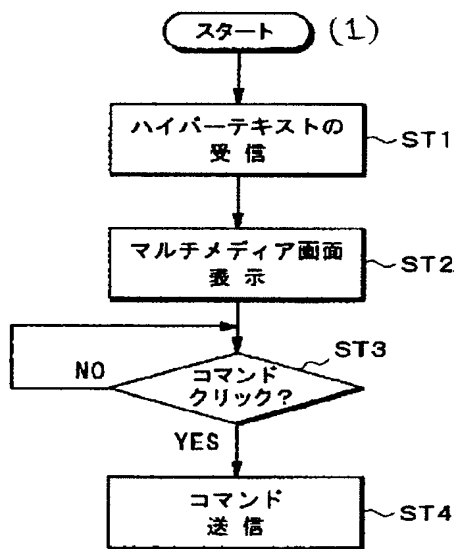
【図5】



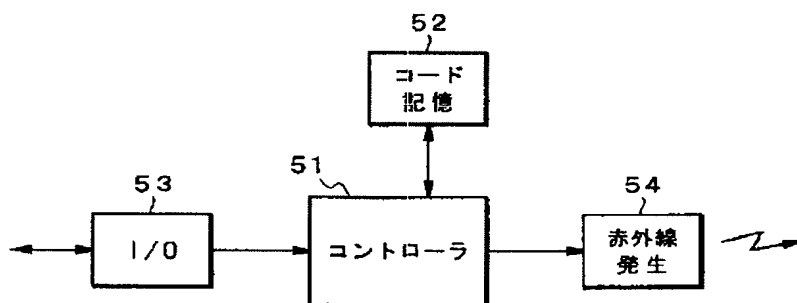
【図6】



【図7】



【図8】





【図9】

(1)			
(2) コードデータ			
アドレス			
A0	(19) A社 VTR	1985~1990	VTR ストップ (3)
A1			VTR 再生 (4)
A2			VTR 巻戻し (5)
A3			VTR 早送り (6)
A4			VTR 録画 (7)
A5			VTR 電源 (8)
A6			Gコード 0 (9)
A7			Gコード 1 (10)
A8			Gコード 2 (11)
A9			Gコード 3 (12)
A10			Gコード 4 (13)
⋮			⋮
A20	(20) A社 VTR	1990~	VTR ストップ (14)
A21			VTR 再生 (15)
⋮			⋮
A40	(21) B社 VTR	1990~	VTR ストップ (16)
A41			VTR 再生 (17)
⋮			⋮
⋮	⋮	⋮	⋮
A100	(22) A社 TV	1985~1990	TV 電源 (18)
A101			TV CH1
A102			TV CH2
⋮			⋮

【図10】

A

(1) 機種設定

1. VTR
2. テレビジョン
3. MDプレーヤ
4. アンプ

B

(2) メーカー設定

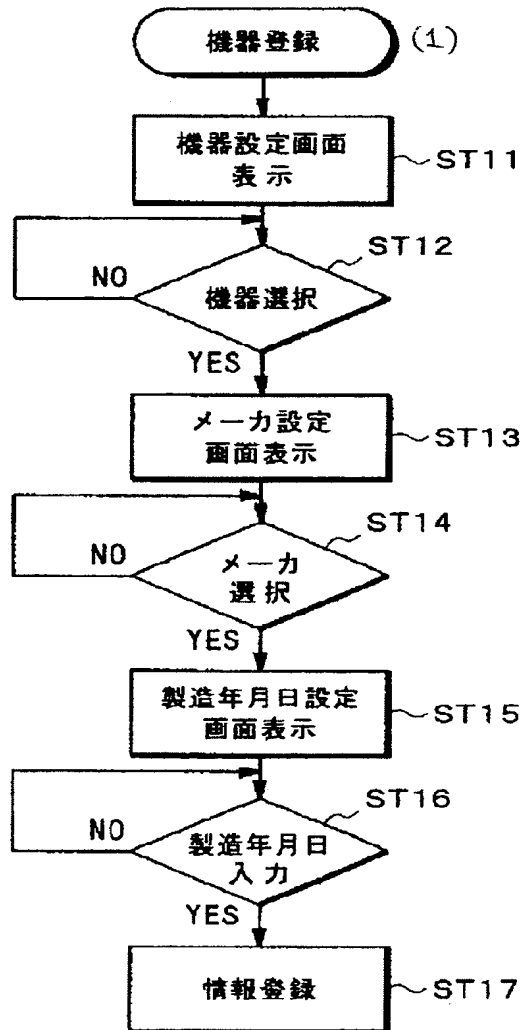
1. A社
2. B社
3. C社

C

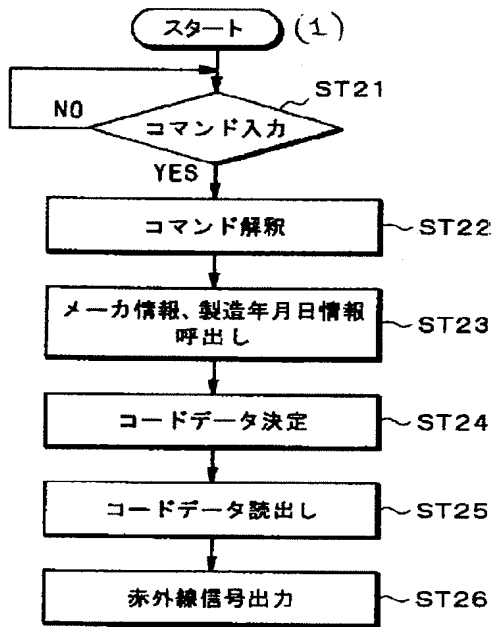
(3) 製造年月日

95   12   10

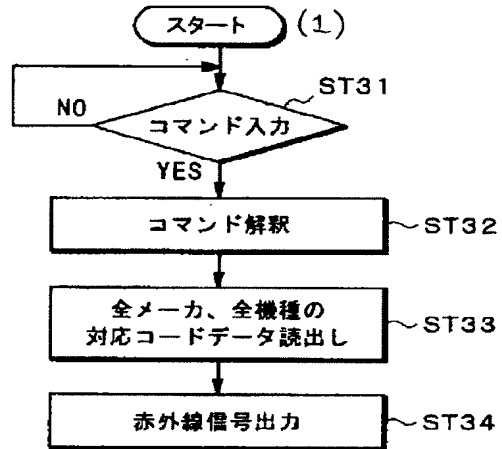
【図11】



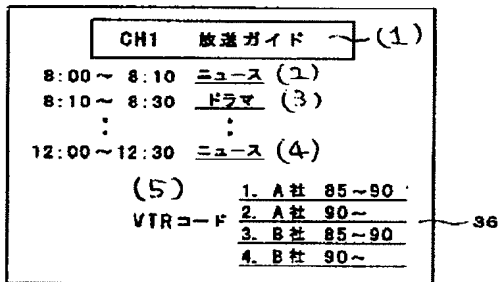
【図12】



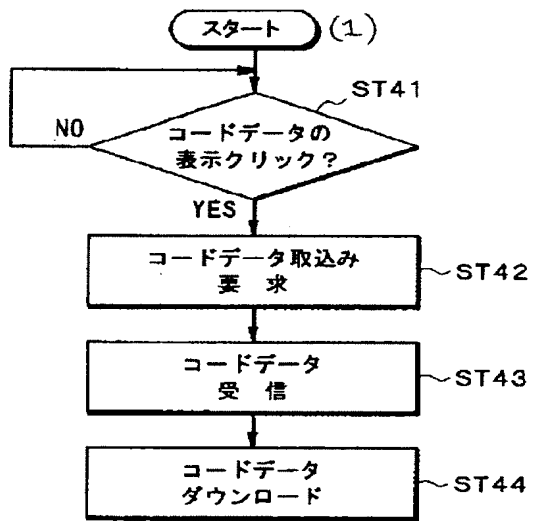
【図13】



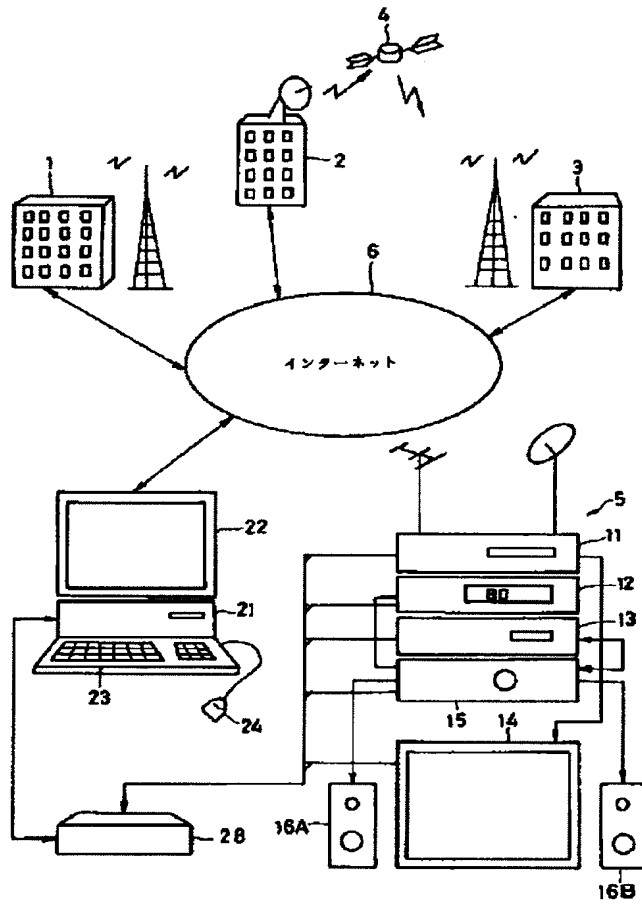
【図14】



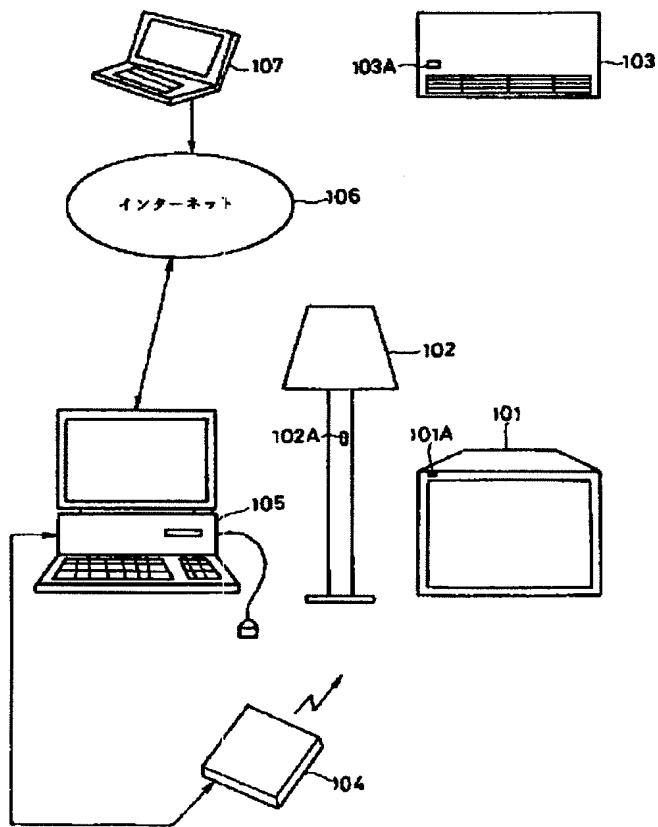
【図15】



【図16】



【図17】



[Title of Document] Abstract

[Abstract]

[Subject]

5 It is intended to easily set a device for program reservation or any other operation mode and to flexibly cope with changes in schedule of programs. It is also intended to collectively control audio/visual systems and electronic device systems.

[Solving means]

10 Commands for setting devices for operation modes are sent in form of a hyper text by using WWW through the internet 6. When a portion of the commands in the WWW page is clicked, a corresponding command is sent to an interface box 25 which, in turn, issues an infrared signal based on the command.  
15 The infrared signal sets devices 11 to 15 for a specific operation mode. Using the system, a user can readily reserve a program while reviewing the WWW page, for example. Additionally, by using a command prepared on the WWW page, a desired program can be reserved easily while confirming  
20 a schedule of programs on the WWW page.

[Selected Drawing] Fig. 1